Conservation Reserves Program
CP-42 Native Habitat Development for Pollinators

Natural Resources Conservation Service (NRCS) – Minnesota **January 2018**

Landowner: _____

Definition
Restoring and conserving native plant communities to benefit pollinators, honey bees and associated wildlife.

Where Used
On landscapes which once supported the habitat to be restored and managed, including land retired from agricultural production entered in retirement programs.

Specifications
To attract pollinators, an area must have adequate sources of food, shelter and nesting sites. A variety of wildflowers and grasses will provide pollinators with food (nectar, pollen, and /or larval host plants). Optional blooming shrubs (1-2 rows) are an especially important source of pollen and nectar for pollinators, usually blooming well before many forb species. Plants must remain undisturbed throughout the growing season.

A pesticide application setback of at least 30' from the edge of the planting into the adjacent cropland is required on all planting configurations.

Plantings shall contain:

- A minimum of nine species of pollinator friendly native forbs – additional forbs are encouraged.
- At least three species shall be from each bloom period – early, mid and late flowering season so that pollinators have continuous food sources.
- A minimum of two native bunch grasses to provide nest sites.
- The mixture will result in 35-40 seeds/ft². Forbs will comprise 75% - 80% of the mixture based on seeds/ft². See Table 1 for recommended species and MN Agronomy Technical Note #31 for design specifications. Agronomy Technical Notes | NRCS Minnesota.
- Seeding Tools | NRCS Minnesota
- ***Mixtures designed to benefit monarch butterflies shall include nectar and larval plants beneficial to the Monarch butterfly. To provide food for monarch butterfly larvae, plantings shall include at least one species of milkweed (Asclepias spp.). Milkweed species shall comprise at least 1.5% of the total mixture (grass and forbs) based on seeds/ft^2. To provide food for adult Monarchs, at least 60% of the forb seeds in the mix shall be from the monarch butterfly planting list in Table 1.***

SIZE

- Offer does not exceed 10 acres of CP42 per FSA tract.
- Offer not to exceed 10 percent of the cropland acres per farm.
- If planted in strips, each strip must be a minimum of 20 feet wide.
- Individual habitat areas of CP42 must be at least 0.5 acres in size.
- CRP Parcel less than 10 acres: At least 1.0 acre of pollinator habitat.
- CRP Parcel 10 acres or greater: At least 10% of acreage offered in pollinator habitat.

Grass/Forb Establishment
Site Preparation - Site preparation, which includes perennial weed abatement and seedbed creation, is crucial for successful native plantings. The key points are to remove *all* perennial weeds through herbicide use, smothering or another weed abatement method, and to prepare a firm seedbed that will ensure good seed-to-soil contact.

Land that has been in grass for many years usually has a thick residue layer on the soil surface. To allow for the best planting success, as much of this residue as possible must be removed. Three options are (1) grazing; (2) mowing with residue removed, and (3) prescribed burn. After most of the residue is removed, use of a broad-spectrum herbicide is usually essential in order to kill remaining vegetation (especially all aggressive perennial weeds such as smooth brome and Canada thistle).

Cultivation of the planting area is likely to raise dormant weed seed from deeper in the soil profile, causing it to germinate. Therefore cultivation should be avoided as a site preparation method. The prepared seedbed should be relatively smooth, with some visible bare ground to ensure good seed-soil contact.

Two planting methods are described below. Dormant season seeding (fall or frost seeding) is recommended. Fall dormant seeding favors forbs due to cold, moist stratification. Fall dormant seeding is recommended unless the forb seed has been pre-stratified before purchase.

No-Till Planting - If possible, use specialized no-till native grass drills for seeding pollinator habitat. Such drills have depth bands designed to handle a wide variety of seed (fluffy, smooth, large, and small) and low seeding rates. Since no-till drilling can plant directly into a light stubble layer, this method reduces erosion on the newly seeded site. Conventional grain drills are not capable of handling diverse seed sizes and are unlikely to provide satisfactory results.

While these no-till native seed drills can plant through light stubble, success is still likely to be greatest when most excess residue (heavy thatch) is removed. Similarly, cultipacking the ground prior to planting will help smooth the seedbed and may improve germination. Do not harrow or till the soil prior to planting, as heavy drills tend to sink in loose soil and depth control is difficult.

Plant seed around one-quarter inch deep. Some seed may be seen on the surface of the ground after seeding. Cultipack the planting area again after seeding if possible.

Broadcast Planting - Prepare a fine firm seedbed to a depth of 3 inches. Use a roller, cultipacker or similar implement prior to seeding. The seedbed should contain enough fine soil particles for uniform shallow coverage of the seed as well as creating direct contact with moisture and nutrients. Broadcast seed at a rate of 1.5 times the normal drill seeding rate. Harrow lightly with a chain link fence (not a heavy spike tooth harrow) to smooth the ground and cover the seed, and roll or cultipack the area again to pack the seed in place.

Post Planting - During the establishment year, mow annual weeds after they have reached 12” in height. Mow 2 to 3 times, generally on 30 day intervals from the date of seeding, or as often as needed to prevent weeds from flowering. Mow to a 6-8 inch height. Use a rotary mower or remove the clippings so as not to smother the seedlings. This will slow the weeds but won't harm the prairie plants. The second year, evaluate the stand to determine if weed control is necessary. If it is, spot mow weeds at a height of six inches. If there is enough material for a prescribed burn, this may be an effective method of control.

Use of Pesticides - Consider prior crop history. Sites with historic intensive row cropping utilizing insecticide treated seed, may benefit from a year of temporary cover to minimize negative impacts from insecticide carryover. Only those pesticides which are labeled for the specific use will be used. University and Extension publications and specific label instructions will be used for guidance on herbicide selection and use.

Operation and Maintenance

1. Prevent unmanaged vegetative disturbance.
2. After the seeding is established control all noxious weeds as identified by state and local laws, by: (a) spot treating with chemicals per label directions, or (b) spot mow before seed heads form.
3. Manage grasses and forbs periodically to rejuvenate grass quality and vigor. Management should occur within 3-5 years of adequate vegetative establishment. Mechanical management activities should take place prior to May 15 or after October 1to protect late flowering plants. No more than 1/3 of the field should be manipulated in a given year.
4. Prescribed fire is the preferred management technique. Fall (October - Early November) burns tend to favor wildflowers.
5. Prevent animal damage by browsing mammals. Replace dead trees and shrubs as necessary.

TABLE 1: NATIVE FORB SPECIES BENEFICIAL TO POLLINATORS, MONARCHS AND OTHER BENEFICIAL INSECTS		Bloom Color	Honey Bee	Monarch	Flowering Season Early = April – June Mid = June – August Late = August - October
DRY to MESIC					
Butterfly Weed	*Asclepias tuberosa*	Orange	x	LH	Mid
Canada Milkvetch	*Astragalus canadensis*	Cream	x		Mid
Compass Plant	*Silphium laciniatum*	Yellow		H	Mid
Culvers Root	*Veronicastrum virginicum*	White	x	H	Mid
Dotted Blazing Star	*Liatris punctata*	Rose		H	Mid
Evening Primrose	*Oenothera biennis*	Yellow			Mid
Foxglove Beardtongue	*Penstemon digitalis*	White	x		Early
Ground Plum	*Astragalus crassicarpus*	Purple	x		Early
Hoary Vervain	*Verbena stricta*	Blue	x	H	Mid
Lance-leaved Coreopsis	*Coreopsis lanceolata*	Yellow	x	H	Early
Leadplant	*Amorpha canescens*	Purple	x	H	Mid
Long-headed Coneflower	*Ratibida columnifera*	Yellow			Mid
Ontario Blazing Star	*Liatris cylindracea*	Purple	x	H	Late
Purple Coneflower Narrow	*Echinacea angustifolia*	Pink	x	H	Mid
Purple Coneflower - Eastern	*Echinacea purpurea*	Pink	x	VH	Mid
Rough Blazing Star	*Liatris aspera*	Purple	x	VH	Late
Showy Goldenrod	*Solidago speciosa*	Yellow	x	VH	Late
Large-flowered Penstemon	*Penstemon grandiflorus*	Lavender	x		Early
Silky Aster	*Symphyotrichum sericeum*	Purple			Late
Skyblue Aster	*Symphyotrichum oolentangiense*	Blue	x	H	Late
Smooth Aster	*Symphyotrichum laeva*	Blue	x	H	Late
Spotted Beebalm	*Monarda punctata*	Lavender	x	H	Mid
Stiff Sunflower	*Helianthus pauciflorus*	Yellow		H	Mid
Stiff Tickseed	*Coreopsis palmata*	Yellow		H	Mid
Wild Blue Phlox	*Phlox divaricata*	Blue	x	H	Early
Wild Columbine	*Aquilegia canadensis*	Red	x		Early
Wild Lupine	*Lupinis perennis*	Lavender			Early
Wild White Indigo	*Baptista lactea*	White			Early
Whorled Milkweed	*Asclepias verticillata*	White	x	LH	Mid - Late
MESIC to WET MESIC					
Blue Vervain	*Verbena hastata*	Blue			Mid
Bottle Gentian	*Gentiana andrewsii*	Blue			Late
Canada Tick Trefoil	*Desmodium canadense*	Purple	x		Mid
Common Oxeye	*Heliopsis helianthoides*	Yellow		H	Mid
Giant Sunflower	*Helianthus giganteus*	Yellow	x	H	Late
Golden Alexanders	*Zizia aurea*	Yellow			Early
Great Blue Lobelia	*Lobelia siphilitica*	Blue		H	Late
Ironweed	*Veronia fasciculata*	Purple	x	H	Late
Meadow Blazing Star	*Liatris lingulistylis*	Purple		VH	Late
Mountain Mint	*Pycnanthemum virginianum*	White	xx		Mid
Partridge Pea	*Chamaechrista fasciculata*	Yellow	x		Mid
Rattlesnake Master	*Eryngium yuccifolium*	White		H	Mid
Sawtooth Sunflower	*Helianthus grosseserratus*	Yellow		VH	Late
Tall Blazing Star	*Liatris pycnostachya*	Purple		H	Mid
Virginia Bluebells	*Mertensia virginica*	Blue	x	H	Early
Wild Bergamot	*Monarda fistulosa*	Lavender		VH	Mid
Yellow Coneflower	*Ratibida pinnata*	Yellow			Mid

TABLE 1: NATIVE FORB SPECIES BENEFICIAL TO POLLINATORS, MONARCHS AND OTHER BENEFICIAL INSECTS (cont)		Bloom Color	Honey Bee	Monarch	Flowering Season Early = April – June Mid = June – August Late = August - October
WET					
Boneset	*Eupatorium perfoliatum*	White	x	H	Late
Cup Plant	*Silphium perfoliatum*	Yellow	x	H	Mid
Joe-pye Weed	*Eupatorium maculatum*	Rose	x	VH	Mid
New England Aster	*Symphyotrichum novae-angliae*	Purple	x	VH	Late
Panicled Aster	*Symphyotrichum lanceolatum*	White	x		Late
Sneezeweed	*Helenium autumnale*	Yellow	xx		Late
Swamp Milkweed	*Asclepias incarnata*	Red	x	LH	Mid
Wingstem	*Verbesina alternifolia*	Yellow	x		Mid
DRY to WET MESIC					
Anise Hyssop	*Agastache foeniculum*	Purple	x		Mid
Black-eyed Susan	*Rudbeckia hirta*	Yellow		H	Late
Common Milkweed	*Asclepias syriaca*	Purple	x	LH	Mid
Cream Gentian	*Gentiana flavida*	Cream			Late
Grass-leaved Goldenrod	*Euthamia graminifolia*	Yellow	x	H	Mid
Purple Prairie Clover	*Dalea purpurea*	Purple	xx		Mid
Maximilian Sunflower	*Helianthus maximiliani*	Yellow	x	H	Late
Spiderworts	*Tradescantia spp.*	Blue			Early
Stiff Goldenrod	*Solidago rigida*	Yellow	x	VH	Late
White Prairie Clover	*Dalea candida*	White	x	H	Mid
Yellow Giant Hyssop	*Agastache nepetoides*	Cream	x	H	Late

XX = Highest value honey bees **Monarch larval host = LH** **Monarch nectar value = Very High, High**

NATIVE GRASSES FOR NATIVE POLLINATOR, MONARCH AND HONEYBEE HABITAT	
	Percentage of Grass Mixture – Seeds/Ft^2
Big Bluestem **OR** Indiangrass	0-25%
Little Bluestem	0-50%
Prairie Dropseed	0-50%
Rough Dropseed	0-25%
Sideoats Grama	0-25%
Wildrye (Canada or Virginia)	0-20%

WOODY SPECIES BENEFICIAL TO NATIVE POLLINATORS AND HONEY BEES		Value to Pollinators 1/	Flowering Season
American Plum	*Prunus americana*	G	Early
Button Bush	*Cephalanthus occidentalis*	EX	Mid
Common Chokecherry	*Prunus virginiana*	EX	Early
Common Ninebark	*Physocarpus opulifolius*	EX	Early
Dogwoods	*Cornus spp.*	G	Early
False Indigo	*Amorpha fruticosa*	EX	Mid
Fragrant False Indigo	*Amorpha nana*	EX	Mid
New Jersey Tea	*Ceanothus americanus*	EX	Mid
Native Rose Species	*Rosa spp.*	EX	Mid
Saskatoon Serviceberry	*Amelanchier alnifolia*	EX	Early
Willow, Pussy or Black	*Salix spp.*	EX	Early
1/ G = Good **EX** = Excellent			

Native Habitat Development For Pollinators– Native Shrub Planting Specifications Sheet

See practice standard 380-Windbreak/Shelterbelt Establishment for site prep and planting specifications.

An aerial view, or if needed an aerial photo of the area to be planted to native trees and shrubs can be shown below. Other relevant information, such as complementary practices, and adjacent field or tract conditions including structures and crop type, and additional specifications may be included.

Row No.	Row Length	Species	Spacing		Number of trees	
			In Row	Between Row	Planned	Planted

Scheduled Planting Date:_____

Site Prep:_____
_____

Application
Planting Stock_____

Source_____

Condition_____

Planted by:_____

Date Planted:_____

Feet:_____ Acres:_____

Field Conditions:_____

Maintenance Required
_____
_____
_____
_____
_____
_____